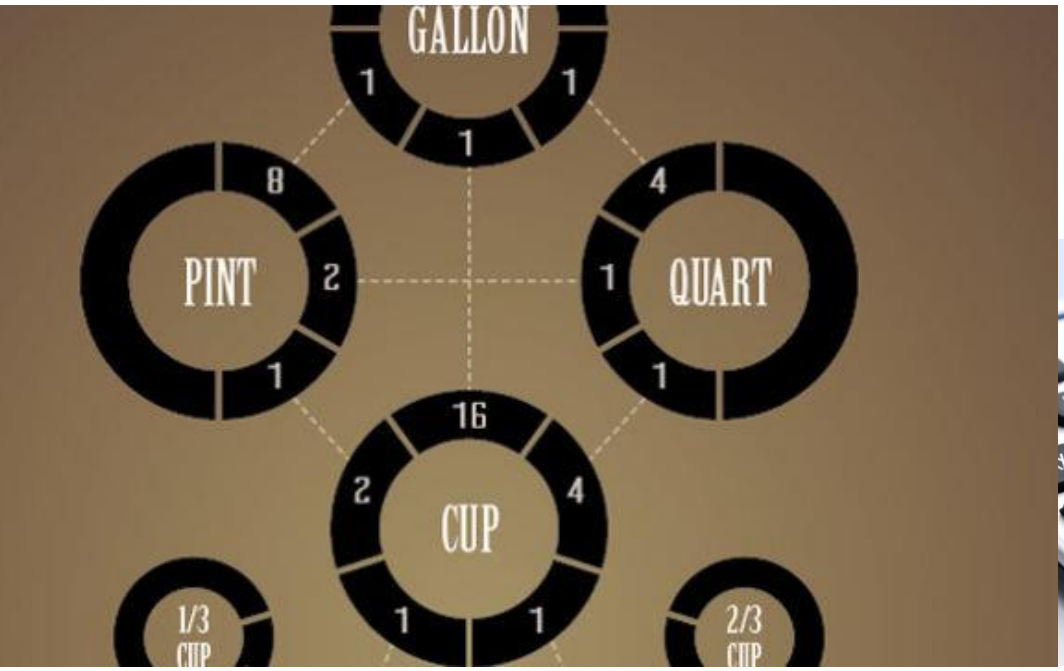
Kitchen Math

Module 1 – Basic Math Skills
Participant Workbook



TOPICS COVERED…

- Goals and Objectives
- Self-Evaluation of Your Math Skills and knowledge (Beginning)
- Identify the Parts of a Basic Calculator
- Add, Subtract, Multiply, and Divide Fractions and Decimals
- Addition (+): Fractions and Decimals
- Subtraction (-): Fractions and Decimals
- Multiplication (x): Fractions and Decimals
- Division (÷): Fractions and Decimals
- Self-Evaluation of Your Math Skills and Knowledge (Ending)

Participant Workbook

Kitchen Math

Module 1 – Basic Math Skills

Goals

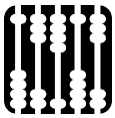
This lesson will

- refresh and improve the participants' math skills and knowledge in an effort to encourage the accurate and efficient use of the FBG calculations as a planning tool and
- encourage the use of handheld calculators.

Objectives

The successful participant will demonstrate the ability to

- operate a handheld calculator
- add, subtract, multiply, and divide fractions and decimals
- convert fractions to decimals;
- convert decimals to fractions; and
- convert fractions and decimals to measurable units.



Self-Evaluation of Your Math Skills and Knowledge
Please complete this self-evaluation prior to training.

#

This section is designed to gather information from the participants at the beginning and end of the Basic Math Review presentation. Following the direction of the instructor, place an identification number in the square in the upper right-hand corner of this page.

Please evaluate your math skills using the following chart. Circle the number that best describes your comfort level for each math function and write it in the last column. Add scores to determine total score. Record the total in the space provided.

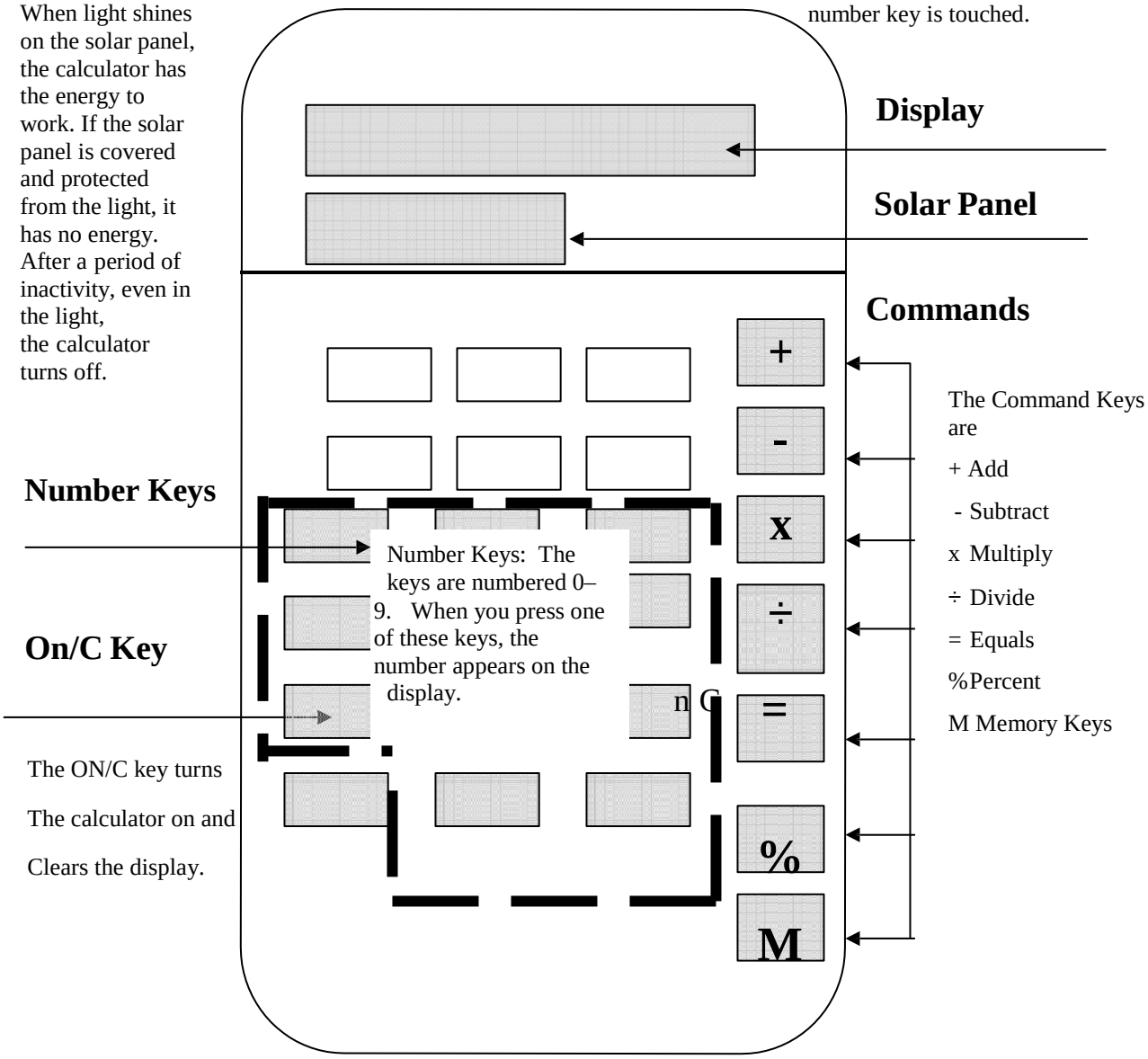
Calculation	Very Comfortable	Comfortable	Somewhat Comfortable	Not at All Comfortable	Score Yourself
Add, subtract, multiply, and divide whole numbers.	4	3	2	1	
Add, subtract, multiply, and divide fractions.	4	3	2	1	
Add, subtract, multiply, and divide decimals.	4	3	2	1	
Convert decimals to fractions.	4	3	2	1	
Convert fractions to decimals.	4	3	2	1	
Convert fractions or decimals to measurable purchase units.	4	3	2	1	
Reduce or simplify fractions.	4	3	2	1	
Round decimals up or down.	4	3	2	1	
				Total Score	

Identify the Parts of a Basic Calculator

Find the following parts of the calculator on the picture and on the calculator you are using. If you have difficulty finding any of the keys, ask the instructor or another participant to help you find it.

Solar Panel:
Many calculators are solar-powered. When light shines on the solar panel, the calculator has the energy to work. If the solar panel is covered and protected from the light, it has no energy. After a period of inactivity, even in the light, the calculator turns off.

Display: There is a 0. (0 and decimal point) in the display until a number key is touched.



The Command Keys are

+ Add

- Subtract

x Multiply

÷ Divide

= Equals

%Percent

M Memory Keys

The ON/C key turns

The calculator on and

Clears the display.

Add, Subtract, Multiply, and Divide

Learning to perform the calculations presented in the FBG is as simple as being able to read and follow directions and add, subtract, multiply, and divide whole numbers, fractions, and decimals.

Add

This breakfast line always has a basket of fresh fruit available. This morning there are 77 apples, 16 oranges, 23 bananas, and 23 peaches. **Add** the numbers together to determine how many children will be able to select fresh fruit.

The fixed labor cost for the day is $336.80. Today there were two substitutes paid $35.00 each. **Add** the $70.00 substitute cost to the fixed cost of labor per day to determine the total cost of labor today.

Subtract

150 servings of peaches were prepared. 123 students selected peaches. **Subtract** 123 from 150 to get the remainder of peaches left over.

Three-quarters (3/4) of a pan of brownies were left over from yesterday. One-quart (1/4) of a pan was served today. **Subtract** the amount used today from the amount left over from yesterday to determine what portion of the pan is left.

Multiply

Mother pre-pays $10.00 for meals for each of her five children. **Multiply** 5 times $10.00 to find the total amount Mother paid.

There are 16 pieces of pizza on each sheet pan. You have 11 full sheet pans. **Multiply** 16 times 11 to determine the total number of pieces of pizza.

Divide

The food cost of a recipe of 100 peanut butter cookies is $12.63. What is the food cost for one cookie? **Divide** $12.63 by 100 cookies to find the food cost per cookie.

The children will have a CN labeled frozen fruit bar on Birthday Monday. There are 4 flavors they like equally, and 16 boxes are needed. How many of each flavor should be ordered? **Divide** 16 by 4 to determine the order.

Mystery Square

The following activity is just for fun. Once you finish the 25 calculations, which are very simple, add the answers left to right, up and down, and diagonally. If all of your calculations are correct, each line will add up to the same number.

Practice math using a calculator to solve the problems. Put the answer below each calculation. When there are multiple calculations, complete the first and then complete the second, using the answer from the first.

Example: (55 – 4) ÷ 3 includes two calculations, (55 - 4 = 51) and (51 ÷ 3 = 17)
The answer to I-A is 17.

	A.	B.	C.	D.	E.	
I.	55 – 4 = __ __ ÷ 3 =	7 x 11 =__ __ – 53 =	100 ÷ 4 = __ __ – 24 =	8 x 9 = __ __ – 64 =	5 + 10 =	
II.	24 - 1 = __ __ x 1 =	14 - 9 =	7 x 10 = __ __ - 63 =	7 x 20 = __ __ – 126 =	80 ÷ 5 =	
III.	3 x 8 = __ __ ÷ 6 =	6 x 6 = __ __ ÷ 6 =	39 - 26 =	200 - 100 =_ ___÷ 5 =	11 + 11 =	
IV.	80 ÷ 4 = __ __ – 10 =	144 ÷ 12 =	10 x 10 = __ __ - 81 =	63 ÷ 3 =	33 - 3 = __ __ ÷ 10 =	
V.	15 + 7 = __ __ ÷ 2 =	22 ÷ 11 = __ __ + 16 =	100 ÷ 2 = __ __ ÷ 2 =	18 x 2 = __ __ - 34 =	80 + 1 = __ — ÷ 9 =	

LA1: Place Values

Place Values

Identify the place value of the number that is underlined in each of the following examples.

Number	Place Value	Number	Place Value	Number	Place Value
73.88	Tens	8.88**8**		**6**5.01	
152.**1**		**2**04.9		7**3**.373	
3**6**.723		15.7**6**9		**1**11.0	
0.5**5**		**3**.1		113.31**1**	

Fractions and Decimals

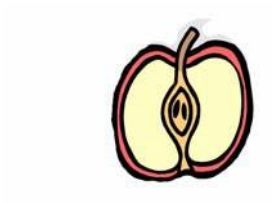
Whole numbers represent whole items, not parts of an item. Below is a picture of 3 apples. Three is a whole number describing the apples. None of the apples are cut into pieces; they are whole. Whole numbers are to the left of the decimal point.

3 is a whole number

3/1 apples written as a fraction

3.00 apples written as a decimal

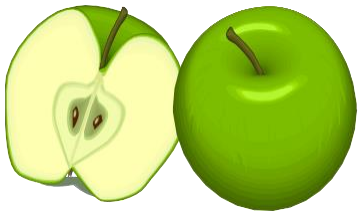
Fractions and decimals are simply two ways to say the same thing. Fractions and decimals describe parts of something. They are used with and without whole numbers. Decimals are the numbers to the right of the decimal point. Below is a picture of one-half of an apple written in a fraction and a decimal. Both the fraction and the decimal say the same thing, one-half of an apple.



Fraction: 1/2 apple

Decimal: 0.5 apple

Sometimes whole numbers and fractions are used together to describe an item. This is called a compound fraction. "Compound" means putting 2 or more things together. Below is a picture of one and one-half apples. This is described with a whole number and a fraction or a decimal. Both the fraction and the decimal describe the same thing, one and one-half apples.



Whole Number: 1 apple

Fraction: 1/2 apple

Compound Fraction: 1-1/2 apples

Decimal: 1.5 apples

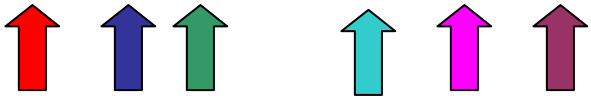
About Fractions and Decimals

Place value: Each number to the left and to the right of the decimal point has a place value. Those numbers to the left of the decimal point are whole numbers; those to the right of the decimal point are decimals or portions of the whole number.

Whether you realize it or not, you use decimals very well every day. United States currency is written in decimals. You already know how to add, subtract, multiply, and divide decimals. For example, if the number below were dollars, you would read it as "six hundred seventy-nine dollars and thirty-seven and one-half cents." If you look below the numbers, you will see that the place values of these numbers are very familiar.

Whole Numbers **Decimals**

679.375



Hundreds Tens Units e Tenths Hundredths Thousandths

Whole Numbers

- 6 is spoken as six hundred and written as the whole number 600. As a fraction, 600 is represented as 600/1; as currency, six hundred dollars might be counted out using six one hundred dollar bills.
- 7 is spoken as seventy and written as the whole number 70. As a fraction, 70 is written as 70/1; as currency, seventy dollars might be counted out using seven ten dollar bills.
- 9 is spoken as nine and written as the whole number 9. As a fraction, 9 is written as 9/1; as currency, nine dollars might be counted out using nine one dollar bills.
- Together the whole numbers become six hundred seventy-nine.

Decimals

- 0.3 is spoken three-tenths. As a fraction, 0.3 is written as 3/10. As currency, 0.3 might be counted out using 3 dimes (3/10 of a dollar).
- 0.37 is spoken thirty-seven hundredths. As a fraction, 0.37 is written as 37/100; as currency, 0.37 might be counted out using three dimes and seven pennies (37/100 of a dollar) or using 37 pennies (37/100 of a dollar).
- 0.375 is spoken three hundred and seventy-five thousandths. As a fraction, 0.375 is written as 375/1000. 0.375 might be counted out using 37 pennies plus 1/2 penny (375/1000).

LA 2: Convert Fractions to Decimals

Convert Fractions to Decimals

To convert a fraction to a decimal is very simple. Divide the numerator (number on top) by the denominator (number on the bottom).

Fraction	=	Numerator	Divided by (÷)	Denominator	=	Decimal
1/4	=	1	**Divided by (÷)**	4	=	0.250
3/8	=		**Divided by (÷)**		=	
1/3	=		**Divided by (÷)**		=	
1/2	=		**Divided by (÷)**		=	
5/8	=		**Divided by (÷)**		=	
2/3	=		**Divided by (÷)**		=	
3/4	=		**Divided by (÷)**		=	
7/8	=		**Divided by (÷)**		=	
25/100	=		**Divided by (÷)**		=	

Can you convert fractions to decimals?

Circle one: Yes, I can convert fractions to decimals. No, I need more practice.

LA 3: Rounding Procedures

Rounding Procedures			
Rounded to	**End #**	**5 or Over or Under 5?**	**Round Up or Round Down?**
103.7359682	2	Under 5	Round Down
103.735968	8		
103.73597			
103.7360			
103.736			
103.74			
103.7			
104.0			

Reduce or Simplify Fractions

When the numerator (the number on top) and the denominator (the number on the bottom) are both evenly divisible by the same number, the fraction may be reduced, or simplified.

We reduce or simplify a fraction to its lowest terms by finding the equivalent fraction in which the numerator and denominator are as small as possible.

- 50/100 is reduced or simplified to 1/2 by dividing both the numerator (50) and the denominator (100) by 50.
- To reduce or simplify a fraction to its lowest terms, divide the numerator and denominator by their greatest common factor.

Examples:

- For the fraction 25/100, 25 is the greatest common factor.
  Both numbers may be evenly divided by 25, so 25/100 is reduced or simplified to 1/4, the smallest numerator and denominator. (25 ÷ 25) / (100 ÷ 25) = 1/4
- For the fraction 75/100, 25 is also the greatest common factor.
  Both numbers may be evenly divided by 25, so 75/100 is reduced or simplified to 3/4, the smallest numerator and denominator. (75 ÷ 25) / (100 ÷ 25) = 3/4
- Let's take a closer look at reducing fractions. When you look at the color-coded chart below, you see a row demonstrating each of the following fractions:
  A. 1 part of 3 parts (1/3)
  B. 2 parts of 6 parts (2/6)
  C. 3 parts of 9 parts (3/9)
  D. 4 parts of 12 parts (4/12)
  E. 5 parts of 15 parts (5/15)
- All of the fractions are the same size; they are all equal. Each can be reduced or simplified to 1/3 by dividing the numerator and denominator by the same number. You will note that 1 part of 3, 2 parts of 6, 3 parts of 9, 4 parts of 12, and 5 parts of 15 are all the same size, 1/3 of the whole.

Each Fraction in the Left Column Can Be Reduced to 1/3: All Are Equal															
1/3	1					2					3				
2/6	1				2				3				4		
3/9	1			2			3			4			5		
4/12	1		2			3			4			5			
5/15	1	2		3			4			5			6		

LA 4: Reduce or Simplify Fractions

Reduce or Simplify Fractions
Use your calculator to reduce or simplify the following fractions.

Fraction to Be Reduced or Simplified	Divide Both the Numerator and the Denominator	By a Number That Will Yield the Smallest Numerator and Denominator	=	Reduced or Simplified Fraction
30/100	÷	10	=	3/10
35/100	÷		=	
10/30	÷		=	
4/80	÷		=	
24/60	÷		=	
90/180	÷		=	
12/60	÷		=	
37/100	÷		=	

Can you reduce or simplify fractions?

Circle one: Yes, I can reduce or simplify fractions. No, I need more practice.

Convert Decimals to Fractions

When you convert a decimal to a fraction, the decimal portion of the number becomes the numerator and the denominator becomes 1, 10, 100, 1000, etc., depending on the place values in the decimal.

Decimals Review:

- The first place to the right of the decimal is tenths place value.
  (0.1 is one-tenth or 1/10)
- The second place to the right of the decimal is hundredths place value.
  (0.01 is one-hundredth or 1/100)
- The third place to the right of the decimal is thousandths place value.
  (0.001 is one-thousandth or 1/1000)

Convert Decimals to Fractions
(continued)

Example: 0.125 becomes 125 over 1000, or 125/1000

- Notice that there are three place values in 0.125, which indicates thousandths.
- When the numerator and the denominator are both divided by 125, the reduced or simplified fraction becomes 1/8.

LA 5: Convert Decimals to Fractions

Convert Decimals to Fractions

Use your calculator to convert the following decimals to fractions. Reducing or simplifying the fractions may be difficult. Do the easy ones first; then go back to the others as time permits.

Decimal to be converted to fraction	The numerator becomes	How many place values are in the numerator?	The denominator becomes	The converted fraction becomes	Reduce the fraction
0.875	875	3	1000	875/1000	(125) 7/8
0.75					
0.666					
0.625					
0.5					
0.33					
0.375					
0.25					

Can you convert decimals to fractions?

Circle one: Yes, I can convert decimals to fractions. No, I need more practice.

* These two numbers do not divide into 1000 or 100 evenly; there is 1 left over. The 3 and the 6 are known as repeating numbers. Even though they are not evenly divisible, they are accepted as 1/3 and 2/3.

Multiplication (x): Fractions, and Decimals

Multiply (x) Fractions

When you multiply fractions, simply multiply the numerators (numbers on top) and put the answer over the multiplied denominators (numbers on the bottom). If you want to convert to decimals, divide the numerator by the denominator to get the decimal equivalent.

- 1/2 times 1/4 equals (1 times 1) over (2 times 4) equals 1/8 converted to decimals is 0.125

$$\frac{1 \times 1}{2 \times 4} = \frac{1}{8} \qquad 1 \div 8 = 0.125$$

- 1/3 times 4/10 equals (1 times 4) over (3 times 10) equals 4/30 converted to decimals is 0.133

$$\frac{1 \times 4}{3 \times 10} = \frac{4}{30} \qquad 4 \div 30 = 0.133$$

LA 6: Multiply Fractions

Multiply Fractions and Truncate the Answer to Three Decimal Places								
Fraction	**x**	**Fraction**	**=**	**Fraction**	**=**	**Reduced**	**=**	**Decimal Truncated to Three Decimal Places**
2/3	x	2/6	=	4/18	=	2/9	=	2/9 =0.2222 or truncated to 0.222
56/100	x	1/3	=		=		=	
8/10	x	15/100	=		=		=	
7/8	x	1/2	=		=		=	
Can you multiply fractions? **Circle one: Yes, I can multiply fractions. No, I need more practice.**								

Divide (÷) Fractions

Dividing a fraction by a fraction may be done in one of two ways. Use the method easiest for you. Both methods yield the same answer.

1. To divide 1/2 (the dividend) by 3/4 (the divisor), multiply diagonally.

$$\frac{1}{2} \quad \frac{3}{4} = \frac{4}{6} \text{ or } \frac{2}{3}$$

The numerator is the product of (1 x 4) and the denominator is the product of (2 x 3). The answer (quotient) becomes 4/6, reduced to 2/3.

2. Or invert the divisor fraction and multiply both numbers going across.

$$\frac{1}{2} \quad \frac{4}{3} = \frac{1 \times 4}{2 \times 3} = \frac{4}{6} \text{ or } \frac{2}{3}$$

The divisor fraction has been inverted (turned upside down); 3/4 becomes 4/3. The numerator multiplied by the numerator (1 x 4 = 4) becomes the numerator of the quotient. The denominator multiplied by the denominator becomes the denominator of the quotient (2 x 3 = 6). The quotient becomes 4/6, which may be reduced to 2/3.

LA 7: Divide (÷) Fractions

Divide Fractions **Divide the following fractions and convert the answer to a decimal.**				
Numerator	**Divided by**	**Denominator**	**Equals**	**Converted to Decimal**
1/2	÷	2/3	3/4	0.75
25/100	÷	1/4		
6/13	÷	1/2		
4/10	÷	1/8		
16/36	÷	3/4		
Can you divide fractions? **Circle one: Yes, I can divide fractions. No, I need more practice.**				

Addition (+): Fractions, and Decimals

Add (+) Fractions

When adding fractions with a **common denominator**, simply add the numerators (numbers on top) and put the answer over the denominator (number on the bottom). If you want to convert to decimals, divide the numerator by the denominator to get the decimal equivalent.

- 1/16 plus 7/16 plus 4/16 equals 12/16 or 3/4 reduced or 0.75 converted to decimals
- 1/2 plus 3/2 plus 2/2 equals 6/2 or 3/1 reduced or 3.00 converted to whole numbers and decimals

When the fractions **do not have a common denominator**, it is not possible to add them until they are converted to the (lowest) common denominator. It is not possible to add 1/2 plus 1/4 plus 1/8 because the denominators in each fraction are different. In order to add these fractions, first we must **convert** them **so they have a common denominator.**

Since one of the denominators is 8, and 8 is divisible by 2 and by 4, the other denominators, we must convert each of the fractions to the common denominator 8.

- To convert 1/2 to a fraction having a denominator of 8, do the following:
  A. Divide the new denominator, 8, by the old denominator, 2. (8 ÷ 2 = 4)
  B. Multiply both the old numerator and denominator (1/2) by 4 to get the new fraction.

  $\frac{4 \times 1 = 4}{4 \times 2 = 8}$ therefore 1/2 equals 4/8
- To convert 1/4 to a fraction having a denominator of 8, do the following:
  A. Divide the new denominator, 8, by the old denominator, 4. (8 ÷ 4 = 2)
  B. Multiply both the old numerator and denominator (1/4) by 2 to get the new fraction.

  $\frac{2 \times 1 = 2}{2 \times 4 = 8}$ therefore 1/4 equals 2/8
- Now that these three fractions have a common denominator (8), we can simply add the numerators together.

  4/8 plus 2/8 plus 1/8 equals 7/8 or 0.875 converted to decimals

LA 8: Add (+) Fractions

Add Fractions

Using the common denominator, restate the problem, solve it, and convert the fraction to its decimal equivalent.

Problem	Common Denominator	Problem Restated With Common Denominator	Answer	Fraction Reduced	Decimal Equivalent
1/8 + 1/24	24	3/24 + 1/24	4/24	1/6	0.166
1/3 + 1/4	12				
3/15 + 4/10	30				
2/3 + 2/6	6				
3/25 + 73/100	100				
1/10 + 15/100	100				
7/8 + 6/16	16				

Can you add fractions?

Circle one: Yes, I can add fractions. No, I need more practice.

Subraction (-): Fractions, and Decimals

Subtract (-) Fractions

When subtracting fractions with a **common denominator**, simply subtract one numerator (number on top) from the other and put the answer over the common denominator (number on the bottom). If you want to convert to the decimal equivalent, divide the numerator by the denominator.

- 14/16 minus 7/16 equals 7/16 or 0.4375 converted to decimals

  $\frac{14 - 7}{16} = \frac{7}{16}$ $\quad 7 \div 16 = 0.4375$

- 3/4 minus 1/4 equals 2/4 or 1/2 or 0.50 converted to decimals

  $\frac{3 - 1}{4} = \frac{2}{4}$ $\quad 2 \div 4 = 0.50$

When the fractions **do not have a common denominator**, it is not possible to subtract one from the other until they are converted to a common denominator. It is not possible to subtract 1/8 from 1/4 because the denominator in each fraction is different. In order to subtract one from the other, **convert both fractions to the (lowest) common denominator**.

Since one of the denominators is 8, and 8 is divisible by 4, the other denominator, we must convert 1/4 to a fraction with a denominator of 8.

To convert 1/4 to a fraction having a denominator of 8, do the following:

- Divide the new denominator, 8, by the old denominator, 4. $(8 \div 4 = 2)$

- Multiply both the old numerator and denominator (1/4) by 2 to get the new fraction.

  $\frac{1 \times 2}{4 \times 2} = \frac{2}{8}$ $\quad$ 1/4 equals 2/8

- Subtract 1/4 minus 1/8, which is the same as 2/8 minus 1/8, which equals 1/8 or 0.125 decimal equivalent.

  $\frac{2 - 1}{8} = \frac{1}{8}$ $\quad 1 \div 8 = 0.125$

LA 9: Subtract (-) Fractions

Subtract Fractions								
Fraction	**Minus**	**Fraction**	**=**	**Fraction**	**Minus**	**Fraction**	**=**	**Answer**
2/3	-	2/6	=	4/6	-	2/6	=	2/6 or 1/3 or 0.33 in decimals
112/200	-	14/100	=		-		=	
8/10	-	15/100	=		-		=	
7/8	-	6/16	=		-		=	

Can you add subtract fractions?

Circle one: Yes, I can subtract fractions. No, I need more practice.

LA 10: Add Decimals

Another way to do the same calculations is with decimals. When you add decimals with paper and pencil, it is important to line up the decimal points before adding columns. When you add decimals on a calculator, it is important to enter the decimal point in the proper place.

Add Decimals

Convert the fraction to a decimal and record in the following row. Use your calculator to add the two decimals.

Fraction	Converted to Decimal	+	Fraction	Converted to Decimal	=	Answer
2/3	0.666	+	2/6 (1/3)	0.333	=	0.999 (1)
3/25		+	73/100		=	
1/10		+	15/100		=	
7/8		+	3/8		=	

Can you add decimals?

Circle one: Yes, I can add decimals. No, I need more practice.

LA 10: Subtract Decimals

Another way to do the same calculations is with decimals. Convert the fractions to decimals by dividing the numerator by the denominator and then subtract. When you subtract decimals, it is important to line up the decimal points. When you subtract on a calculator, it is important to enter the decimal point in the proper place. Compare the answers in this exercise to the answers in the exercise above.

Subtract Decimals
Use your calculator to subtract decimals.

Fraction	Divide Numerator by Denominator	Minus	Fraction	Divide Numerator by Denominator	=	Answer
2/3	2 ÷ 3 = **0.66**	-	2/6	2 ÷ 6 = **0.33**	=	**0.33**
112/200	112 ÷ 200 =	-	14/100	14 ÷ 100 =	=	
8/10	8 ÷ 10 =	-	15/100	15 ÷ 100 =	=	
7/8	7 ÷ 8 =	-	6/16	6 ÷ 16 =	=	

Can you subtract decimals?

Circle one: Yes, I can subtract decimals. No, I need more practice.

Multiply (x) Decimals

Another way to do the same calculations is with decimals. Convert the fractions to decimals by dividing the numerator by the denominator and then multiply.

When you multiply decimals treat the numbers just as if they were whole numbers.

- Line up the numbers on the right; it is not necessary to line up the decimal points.
- Start on the right, and multiply each digit in the top number by each digit in the bottom number, just as with whole numbers.
- Add the products.
- Place the decimal point in the answer by starting at the right and moving a number of places equal to the sum of the decimal places in both numbers multiplied.

237.44 2 decimal places
x19.5 1 decimal place
118720
213696
23744
4630080 = 4,630.080 (3 decimal places)

LA 11: Multiply Decimals

Multiply Decimals **Let's try a few more with whole numbers. Instead of truncating these, round them up or down based on the general rules of rounding.**						
Decimal	**x**	**Decimal**	**=**	**Decimal Product**	**=**	**Rounded Up or Down to 2 Decimal Places**
23.5	x	17.35	=	407.725	=	407.73
114.56	x	2.333	=		=	
8.8	x	44.15	=		=	
1703.875	x	3.5	=		=	

Divide (÷) Decimal

When you divide decimals without a calculator, the divisor must always be changed to a whole number. Move the decimal points in the dividend and the divisor the same number of places to the right in order to do this. If there are not sufficient places in the dividend, zeros must be added.

1.395 divided by .05 becomes 139.5 divided by 5

1.3000 divided by .0556 becomes 13,000 divided by 556

LA 12: Divide Decimals

Convert Fractions to Decimals and Divide				
Numerator Convert to Decimal	**Divided by**	**Denominator**	**Equals**	
1/2 = 0.5	÷	2/3 = 0.666	0.750	
25/100 = 0.25	÷	1/4 = 0.25		
6/13 = 0.462	÷	1/2 = 0.5	*	
4/10 = 0.4	÷	1/8 = 0.125		
16/36 = 0.444	÷	3/4 = 0.75	*	
Can you divide decimals? **Circle one: Yes, I can divide decimals. No, I need more practice.**				

*Rounding in the numerator and/or denominator results in small variances.

Check What You've Learned

LA 1a: Words Problems, Addition (+)

1. The fixed labor cost for the day is $336.80. Today there were two substitutes paid $35.00 each. Add the $70.00 substitute cost to the fixed cost of labor per day to determine the total cost of labor today.

   Sum total cost of labor today: _____

2. This breakfast line always has a basket of fresh fruit available. This morning there are 77 apples, 16 oranges, 23 bananas, and 12 peaches. Add the numbers together to determine how many children will be able to select fresh fruit.

   Sum total pieces of fresh fruit: _____

3. In the storeroom there are 1/2 case of peaches, 1/3 case of pears, and 1/6 case of applesauce. Add the fractions of a case to determine the total number of cases of fruit.

   Sum total cases of fruit: _____

Can you add whole numbers, fractions, and decimals?

Do you need additional practice?

LA 1b: Words Problems, Subtraction (-)

1. The total cash receipts for the day were $105.00. A student moving from the district requires a refund of $20.00 for unused prepaid meals. Subtract $20.00 from $105.00 to get the remainder of the day's cash receipts.

   Remainder of the cash receipts: _____

2. 150 servings of peaches were prepared. 123 students selected peaches. Subtract 123 from 150 to get the remainder of peaches left over.

   Remainder of the peaches: _____

3. Three-quarters (3/4) of a pan of brownies were left over from yesterday. One-quarter (1/4) of a pan was served today. Subtract the amount used today from the amount left over from yesterday to determine what portion of the pan is left.

   Remainder of a pan of brownies: _____

Can you subtract whole numbers, fractions, and decimals?
Do you need additional practice?

LA 1c: Words Problems, Multiplication (x)

1. Mother pre-pays $10.00 for meals for each of her five children. Multiply 5 times $10.00 to find the total amount Mother paid.

   Mother paid: _____

2. There are 16 pieces of pizza on each sheet pan. You have 11 full sheet pans. Multiply 16 times 11 to determine the total number of pieces of pizza.

   Total number of pieces of pizza: _____

3. Four cases of six No. 10 cans of yams were delivered. Multiply 4 cases times 6 cans per case to determine the number of cans of yams delivered.

   Total cans of yams: _____

4. The recipe calls for 1/2 c of sugar. You are making half of the recipe. How much sugar do you need? (1/2 x 1/2 c).

   Sugar needed: _____

5. The recipe calls for 0.5 c of sugar. You are making half of the recipe. How much sugar do you need? (0.50 x 0.50 c).

   Sugar needed: _____

Can you multiply whole numbers, decimals, and fractions?
Do you need additional practice?

LA 1d: Words Problems, Division (÷)

1. The food cost of a recipe of 100 peanut butter cookies is $12.63. What is the food cost for one cookie? Divide $12.63 by 100 cookies to find the food cost per cookie.

   Food cost per cookie: _____

2. Lunch is over and there are 24 carrot curls left. Four staff members have not yet eaten. How many carrot curls may each staff member have? Divide 24 carrot curls by four to determine how many each will have for lunch.

   Carrot curls for each staff member: _____

3. The children will have a CN labeled frozen fruit bar on Birthday Monday. There are 4 flavors they like equally, and 16 boxes are needed. How many of each flavor should be ordered? Divide 16 by 4 to determine the order.

   Number of boxes of each flavor: _____

Can you divide whole numbers, decimals, and fractions?
Do you need additional practice?

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Self-Evaluation of Your Math Skills and Knowledge

Please complete this self-evaluation once training has CONCLUDED.

Please re-evaluate your math skills using the following chart. Circle the number that best describes your comfort level for each math function and write it in the last column. Add scores to determine total score.

Calculation	Very Comfortable	Comfortable	Somewhat Comfortable	Not at All Comfortable	Score Yourself
Add, subtract, multiply, and divide whole numbers.	4	3	2	1	
Add, subtract, multiply, and divide fractions.	4	3	2	1	
Add, subtract, multiply, and divide decimals.	4	3	2	1	
Convert decimals to fractions.	4	3	2	1	
Convert fractions to decimals.	4	3	2	1	
Convert fractions or decimals to measurable purchase units.	4	3	2	1	
Reduce or simplify fractions.	4	3	2	1	
Round decimals up or down.	4	3	2	1	
				Ending Total Score	
				Beginning Total Score (from page 2)	
				Difference	

References:
The activities utilize content from the following resources:

- *Food Buying Guide Instructor Manual and Participant Workbook – Basic Math Review*
- *Math Principles for Food Service Operations, 6th Ed,* Strianese, A., P Strianese, 2012.
- Concepts for math instruction were also incorporated from *Math Doesn't Suck,* by Danica McKellar, Hudson Street Press: 2007.